F00398

NOAA FORM 76-35A

U.S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION
NATIONAL OCEAN SERVICE

DESCRIPTIVE REPORT

Type of Survey Side Scan Sonar

Field No. MI-10-5-94

Registry No. FE-398SS

LOCALITY

State Louisiana

General Locality Gulf of Mexico

Sublocality 11 NM SW of Isles Dernieres

19 94

CHIEF OF PARTY
CAPT N. A. Prahl

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NOAA FORM 77-28
(11-72)

U.S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

REGISTRY NUMBER:

FE-398SS

HYDROGRAPHIC TITLE SHEET

INSTRUCTIONS: The Hydrographic Sheet should be accompanied by this form, filled in as completely as possible, when the sheet is forwarded to the Office.

FIELD NUMBER:
MI-10-05-94

State: Louisiana

General locality: Gulf of Mexico

Locality: 11 ~~Nautical Miles~~ NM, ~~Southwest~~ SW of Isles Dernieres, ~~LA~~

Scale: 1: 10,000

Date of survey: ~~13~~ 18 June to ~~29~~ 25 July 1994

Instructions dated: ~~15~~ 6 April 199~~4~~ 3

Project Number: OPR-S-K904-MI-94

Vessel: NOAA Ship MT MITCHELL S-222

Chief of Party: CAPT Nicholas A. Prahl

Surveyed by: J.A. Ferguson, M.W. Stukes, J.D. Swallow, J.A. Mann, E.J. Van Den Ameele, M.P.M. Soracco, S.A. Shaulis, U.L. Gardner, P.G. Lewit, M.E. Ahern, M.J. Annis, L.A. Butler, E.R. Yniguez, and M.T. Lathrop.

Soundings taken by echo sounder, hand lead-line, or pole: DSF 6000N fathometer

Graphic record scaled by: MT MITCHELL personnel

Graphic record checked by: MT MITCHELL personnel

Protracted by: N/A

Automated plot by: ENCRD NOVAJET (AHS) Zeta 936 Plotters (FIELD)

Verification by: Hydrographic Surveys Branch ATLANTIC HYDROGRAPHIC SECTION PERSONNEL (FIELD)

Soundings in: Feet: * Fathoms: ____ Meters: (*) at MLW: ____ MLLW: (*) :

Remarks: Field Examination for AWOIS item #'s 8431, 8433, and 8435

Time zones used: 0 (UTC) for data acquisition and tidal data

200 % side scan sonar coverage on AWOIS item #'s 8431 and 8433

400 % side scan sonar coverage on AWOIS item # 8435

Electronic Data Processing (EDP) numbers involved in data acquisition: 2223, 2225, and 2226

NOTES IN RED WERE MADE DURING OFFICE PROCESSING.

SA 7-11-95 AWOIS/SURF ✓ 7/24/95 SJV

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* FILED WITH THE ORIGINAL FIELD RECORDS.

A. PROJECT

A.1 This survey was conducted in accordance with Project Instructions OPR-S-K904-MI-94, Louisiana Coast Item Investigations, Louisiana.

A.2 The original date of the instructions is April ~~15~~ 6, 1993.

A.3 The following changes to the original instructions are relevant to this survey:

July 23, 1993 - Change #1. A copy is provided in Appendix VI.

April ~~15~~ 6, 199~~4~~ 3 - Change #2. A copy is provided in Appendix VI.
STET (SJV, 7/20/95)

A.4 A sheet letter was not specified in the project instructions. Sheet letter "D" was assigned by the ship.

A.5 Project OPR-S-K904-MI-94 responds to concerns expressed by the Eighth Coast Guard District regarding the effect of Hurricane Andrew in 1992 in the vicinity of Ship Shoal. Various types of wreckage, including jack-up oil rigs destroyed in previous hurricanes, have either disappeared or been moved to unknown locations by the strong currents generated by Andrew's storm surge.

B. AREA SURVEYED

B.1 The survey area is located 11 nautical miles SW (southwest) of the eastern tip of Isles Dernieres, Southern Louisiana Coast. Existing depths are between 7 and 17 meters (23 to 57 feet). AWOIS items 8431, 8433 and 8435 are covered on this sheet.

The primary traffic in the area are oil rig tending/supply transports, tug and barge traffic, seismographic survey, and small trawling vessels. The traffic is almost exclusively shallow draft vessels.

B.2 The survey area is ~~rectangular~~ CIRCULAR in shape with the sheet rotated 270°. The latitude and longitude of the corners of the ~~survey~~ SHEET area are:

028° 50' 03.0"N	090° 41' 00.0"W
028° 50' 03.0"N	090° 45' 40.0"W
028° 56' 40.0"N	090° 45' 40.0"W
028° 56' 40.0"N	090° 41' 00.0"W

The AWOIS Listing indicated that AWOIS items 8431 and 8433 required 200% side scan coverage. AWOIS item 8435 required 400% side scan coverage. The charted positions and search radii for the AWOIS items on this sheet are as follows:

Item	Charted Position	Search Radius
AWOIS 8431	28° 53' 00.85"N 090° 43' 00.32"W	3000 meters
AWOIS 8433	28° 53' 36.85"N 090° ~~49' 30.33~~"W 43' 24.32"	3000 meters
AWOIS 8435	28° 53' 48.85"N 090° 42' 32.32"W	500 meters

B.3 Data acquisition began on June 17, 1994 (DN 168) and concluded on July 27, 1994 (DN 208).

C. SURVEY VESSELS

C.1 The following vessels were used during this project:

VESSEL	ELECTRONIC DATA PROCESSING NUMBER	PRIMARY FUNCTION
MT MITCHELL	2220	Sound Velocity Casts, Processing
LAUNCH 1004 (MI-3)	2223	Hydrography/Side Scan Operations
LAUNCH 1021 (MI-5)	2225	Hydrography/Side Scan Operations, Tide Gage Support
LAUNCH 1008 (MI-6)	2226	Diving Operations, Dive D.P.
BOSTON WHALER (MI-1)	N/A	Diving Operations, Tide Gage Support

C.2 There were no unusual vessel configurations used for side scan sonar data acquisition during this field investigation. No problems were encountered with the standard launch stern tow of the side scan sonar towfish.

D. AUTOMATED DATA ACQUISITION AND PROCESSING

D.1 Survey data acquisition and processing were accomplished using the HDAPS system with the following software versions:

Program Name	Version	Date Installed
BACKUP	2.00	June 02, 1994
BASELINE	1.14	June 02, 1994
BIGABST	2.07	June 02, 1994
BIGAUTOST	3.01	June 02, 1994
BLKEDIT	2.02	June 02, 1994
CARTO	2.13	June 18, 1994
CLASSIFY	1.05	June 02, 1994
CONTACT	2.35	July 18, 1994
CONVERT	3.62	June 02, 1994
DAS_SURV	6.70	June 18, 1994
DIAGNOSE	3.04	June 18, 1994
DISK_UTIL	1.00	June 02, 1994
DP	2.14	June 02, 1994
EXCESS	4.21	June 02, 1994
FILESYS	3.24	June 18, 1994
GRAFEDIT	1.06	June 02, 1994
HIPSTICK	1.01	June 02, 1994
HPRAZ	1.26	June 02, 1994
INVERSE	2.01	June 02, 1994
LISTDATA	1.02	June 02, 1994
LOADNEW	2.10	June 02, 1994
LSTAWOIS	3.07	June 18, 1994
MAINMENU	1.20	June 02, 1994
MAN_DATA	2.01	June 02, 1994
NEWPOST	6.01	June 02, 1994
PLOTALL	2.27	June 18, 1994
POINT	2.10	June 02, 1994
PREDICT	2.01	June 02, 1994
PRESURV	7.08	June 18, 1994
PRINTOUT	4.03	June 02, 1994
QUICK	2.05	June 18, 1994
RAMSAVER	1.02	June 02, 1994
REAPPLY	2.10	June 02, 1994
RECOMP	2.02	June 02, 1994
SCANNER	1.00	June 02, 1994
SELPRINT	2.04	June 02, 1994
SYMBOLS		June 02, 1994
VERSIONS	1.00	June 02, 1994
ZOOMEDIT	2.24	June 18, 1994

To conduct DGPS performance checks a *LOTUS 1-2-3* spreadsheet was used. A copy of the spreadsheet is included in **Separates III**. FILED WITH THE ORIGINAL FIELD RECORDS

D.2 Two programs were used to compute velocity correctors: *VELOCITY* (Ver. 2.10), dated March 15, 1994, and *CAT* (Ver. 2.00), dated December 18, 1992.

D.3 There were no nonstandard automated acquisition or processing methods used. Some side scan data was plotted at a reduced range scale during processing to eliminate questionable outer edge side scan traces. Splits were run to ensure adequate overlap between these lines.

E. SIDE SCAN SONAR EQUIPMENT

E.1 Side scan sonar operations were conducted using an EG&G Model 260-TH slant range corrected side scan recorder and a Model 272-T (single frequency) towfish. All side scan operations were conducted from either Launch MI-3 or Launch MI-5 (VesNo 2223 and 2225). The following list shows the equipment serial numbers and corresponding dates used for each boat.

Vessel Number	Equipment Type	Serial Number	Days Used
2223	Recorder	16672	DN 168-208
2223	Towfish	16699	DN 168-170
2223	Towfish	11902	DN 171-208
2225	Recorder	16673	DN 168-208
2225	Towfish	11901	DN 168-208

E.2 All side scan sonar towfish were configured with a 20° beam depression.

E.3 The 100 kHz frequency for the side scan sonar was used throughout this entire survey.

E.4 **a)** In sufficiently deep water and calm sea conditions the 100 meter range scale was used for coverage. On the shoal area of the sheet (under 10 meters water depth) the 75 and 50 meter range scales were used. Quite often sea conditions precluded the use of the 100 meter range scale. In which case, 50 or 75 meter range scale were used to obtain adequate coverage with minimal sea return.

The 50 meter range scale was used for contact development, as it yields a trace of higher definition.

Line spacing for main scheme coverage was determined using the formula provided in section 7.3.2.2 of the Field Procedures Manual ($LS_{max} = 2RS - 2EPE_{max}$). The predicted maximum estimated position error (EPE) did not exceed 15 meters within the survey area, so a maximum line spacing of 170 meters was established for the 100 meter range scale, 120 meter line spacing for the 75 meter range scale, and 70 meter line spacing for the 50 meter range scale.

The first 100% sonar coverage was completed in a East-West direction. The second 100% was begun at 90° to the first 100% in a North-South direction for assurance of coverage. However, due to frustrating sea conditions on many days the second 100% was not completed.

b) Daily opening and closing confidence checks were obtained either by towing the fish past the anchor chain of a nearby derelict drilling rig called the "Ocean Explorer", or by towing it past the numerous platforms contained within the sheet. One confidence check was obtained on MT MITCHELL's anchor and anchor scours. Confidence checks were also possible throughout the day from debris and pipelines on the bottom.

c) As indicated in section B.2 of this report, AWOIS items 8431 and 8433 required 200% side scan sonar coverage, and AWOIS item 8435 required 400% side scan sonar coverage. The search radii for all three AWOIS items were covered with 100%.

d) Through the course of data acquisition we had to overcome several problems with our side scan trace. The problems were as follows:

On several occasions, schools of fish were observed both in the water and on the trace as large dark blotches. Patches of Sargasso weed floating on the surface also appeared as large dark blotches. In addition, other vessels created turbulence in the water resulting from their wakes. Whenever possible, these sources of noise were annotated on the sonargrams.

Sea conditions played a critical role in the quality of our side scan sonar images. On windy days, the sea state would reflect on the trace, producing unacceptable results. Whenever we felt we could not see through the sea return, data was rejected or the effective swath coverage was reduced to the range that was acceptable.

A pronounced thermocline/halocline was noticed during the diving activities and in the water column of the side scan trace. This caused problems with the quality of our side scan sonar images. The problem was annotated as a "muck layer" on some of the side scan records. The effect was minimized by adjusting the fish height to ride below the layer, but in some instances it was not possible to keep the fish height above 8% of the range scale.

When these factors obscured the sonar traces, the effective range scale was reduced during processing, or the entire line was rejected and rerun.

e) The towfish were deployed from the sterns of both launches during the entire survey period.

E.5 Once a contact was considered significant, based on shadow height or fathometer readings, a launch was sent back to the contact for further development. The contact development consists of running several side scan sonar lines over the contact to insonify the contact from different perspectives. These development lines were run using the 50 meter range scale for more detailed sonargrams.

Based on the results of the contact development, the contact was judged to be a "No Further Investigation" or a "Dive Site" (NFI and DIVE on the contact tables respectively). For the Dive Site investigation, the divers would search for the contact, obtain a least depth on the contact, and place a marking buoy on a short stay at the point of least depth. A launch would then obtain a Detached Position on the marking buoy and then retrieve the buoy.

Due to the time constraints combined with much weather downtime some contacts were not developed. Completion of the second 100% coverage may have eliminated some of these contacts. These contacts are labeled "Pending Survey Completion" (PSC on the contact tables).

E.6 Any contact thought to be significant was entered into the contact tables. Significance was based on shadow height and general appearance of the contact. Once 100% and partial 200% coverage were achieved the contact tables were compared to see which contacts were rediscovered. Based on rediscovery and shadow heights, most of the contacts were judged to require no further investigation. The contacts deemed important were then developed using the procedures described in section E.5 above.

Overlap was checked on-line using the real-time swath plot and checked again during processing using the edited swath plot. Any overlap less than two millimeters at the scale of the survey was considered a gap. Gaps were filled by running additional side scan sonar lines.

During routine data acquisition for this sheet, several gaps in the side scan sonar coverage were created. The sources of these gaps included; reduced swath width from sea return, DGPS reception failures, bad helm, and starting or breaking line inappropriately. The majority of these gaps were found during data processing and a launch was sent to run a "gap line" to achieve the appropriate side scan sonar coverage.

F. SOUNDING EQUIPMENT

F.1 All hydrographic soundings were acquired using a Raytheon 6000N Digital Survey Fathometer (DSF). The following list shows the equipment serial numbers and corresponding days used for each boat.

Vessel Number	Serial Number	Days Used
2223	C066	DN 168-200
2223	B046N	DN 200-208
2225	B053N	DN 168-208

F.2 The one diver-determined least depth was measured with a calibrated lead line. System checks on the fathometers were performed using lead lines. These lines were calibrated as per instructions in the Hydrographic Manual section 7.2.1.2. Refer to **Separate IV** for calibration data. FILED WITH THE ORIGINAL FIELD DATA

F.3 No faults in the sounding equipment were observed.

F.4 Both the high (100kHz) and the low (24 kHz) frequency sounding data were recorded during data acquisition. Only high frequency soundings were selected for plotting. Low frequency sounding data were examined for irregularities.

G. CORRECTIONS TO SOUNDINGS

G.1

a) Detailed information and tables used to determine all corrections to soundings can be found in **Separate IV.** FILED WITH THE ORIGINAL FIELD RECORDS

The velocity of sound through water was determined using a Seacat conductivity, temperature and density gauge (S/N 192472-0284) manufactured by Sea-Bird Electronics, Inc. A Data Quality Assurance (DQA) Test was conducted with each velocity cast to ensure the meter was within tolerance. The DQA test was performed with another Seacat (S/N 192472-0285) for the first cast. DQA tests were done with hydrometers calibrated by using standards of the National Institute of Standards and Technology which conforms to and satisfy the requirements set for this project.

All data were processed using *VELOCITY* Version 2.10 and *CAT* Version 2.00 software. The computed velocity correctors were entered into the HDAPS sound velocity tables and applied on-line to digitized high frequency soundings except for data collected on the days of the casts. Data was reapplied for those days. Sound velocity correctors applied to this survey were obtained as follows:

Cast Number	Day	Latitude	Longitude	HDAPS Table #	Applied To Day #'s
1	170	28° 51.0' N	090° 43.0' W	1	168-175
2	188	28° 51.1' N	090° 42.9' W	3	188-194
3	200	28° 51.5' N	090° 44.0' W	5	200-208

b) There was no variation in the DSF-6000N instrument initial.

c) No instrument correctors to the DSF-6000N were required.

d) No instrument corrections were determined from direct comparison of lead-line checks.

Lead line comparisons to the DSF-6000N were made for each launch on days 168, 170, 188, 200, and 205. Results are as follows:

VN	S/N	Corrected Lead Line Depth (m)	Corrected Digital Depth (m)	Δd (m)
2223	C066	15.0	14.9	0.1
2223	C066	8.5	8.6	-0.1
2223	C066	7.1	7.3	-0.2
2223	B046N	7.8	7.8	0.0
2225	B053N	10.2	10.3	-0.1
2225	B053N	9.3	9.3	0.0
2225	B053N	13.2	13.3	-0.1

e) All sounding correctors were applied to both the narrow (100 kHz) and the wide (24 kHz) beams.

f) The static draft of launches MI-3 (VesNo 2223) and MI-5 (VesNo 2225) were determined in March, 1994 before the beginning of the field season. A calibrated steel tape was used to measure the distance from the transducer to a reference line on the launch above the waterline. The launches were then put in the water and the distance from the waterline to the reference line was measured. Static drafts were used in HDAPS offset tables for both launches Refer to **Separate III*** for the offset tables.

g) Settlement and squat correctors for each launch were determined, using procedures outlined in the Hydrographic Manual, on the Elizabeth River in March, 1994. An observer, stationed with a level on a pier, measured changes in relative height as each launch ran toward and away from the observer at various speeds. Settlement and squat correctors were applied to soundings through the HDAPS offset table. Refer to **Separate IV*** for a more detailed description of the static and dynamic draft determinations.

h) Neither launch is equipped with a heave, roll and pitch indicator. Sea action on the fathogram was scanned out during processing.

G.2 The HDAPS program "Reapply" was used for data collected on the first day of each leg. Velocity casts were performed at the start of each leg. On that first day the launches ran on velocity table 0, and on the appropriate table thereafter. Once the new HDAPS velocity table became available the data was reapplied correspondingly.

G.3 Velocity casts were performed at the start of each leg. A velocity table was then generated and entered into HDAPS. This table was reapplied to the survey data acquired prior to the cast. Based on the consistency of other casts taken in the Ship Shoal area throughout the project, we are confident that the water column had not changed significantly over this time period. Refer to **Separate IV*** for cast data.

G.4 Pneumatic depth gauges were not used during this survey.

* FILED WITH THE ORIGINAL FIELD RECORDS

G.5 Frequently, sea conditions affected the fathogram, creating a trace of constant peaks and deeps. Launches are not equipped with heave, pitch and roll indicators. To compensate, the sea action was scanned out and selected sounding depths were edited during processing on board the MT MITCHELL.

G.6 **a)** The tidal datum for this project is mean lower low water. The operating tide station at Grand Isle, Louisiana (876-1724) served as reference station for predicted tides, and the previously established tide station at East Isles Dernieres (876-2888) was the direct control for datum determination. Predicted tidal data for Grand Isle tides was provided on floppy magnetic disk before the start of the project. APPROVED TIDES HAVE BEEN APPLIED DURING OFFICE PROCESSING

b) The height and time correctors listed below were provided in the Project Instruction for the project area, and applied to the Grand Isle predicted tides to generate an on-line predicted tide table:

HYDROGRAPHIC AREA	TIME		HEIGHT RATIO
	High Water	Low Water	
East of 091 30.0' W and West of 090 20.0' W	-30 min	-30 min	* 1.26

The tide tables were applied on-line and during processing of sounding data. For a more detailed overview of tidal information please refer to Appendix V. FILED WITH THE ORIGINAL FIELD RECORDS.

c) No zoning is required for this project.

H. CONTROL STATIONS SEE ALSO THE EVALUATION REPORT

H.1 The horizontal datum for this project is the North American Datum of 1983 (NAD 83).

H.2 The list of horizontal control stations is ~~located in Appendix III~~. APPENDED TO THIS REPORT.

H.3 Three DGPS reference stations were used to control this survey. These are listed below. The position for the USCG Galveston beacon was provided by Hydrographic Surveys Branch on April 12, 1992 and is a Second Order Class I position. The position for the USCG New Orleans beacon was published via memo from Hydrographic Surveys Branch on July 16, 1993 and is a B-Order position. Station Muench was established by Coastal Survey Unit, Field Photogrammetry Section, Photogrammetry Branch, in 1989 for a NOAA Ship WHITING project. The Third Order Class I position for station Muench was obtained from the Field Photogrammetry Section and verified by MT MITCHELL personnel using the NOS *MONITOR* program during the 1993 field season.

Reference Station	Latitude	Longitude	Frequency
~~USCG Beacon, Galveston, TX~~ ENGLISH TURN	29° 19' 45.09171" N	094° 44' 10.48430" W	296 kHz
~~USCG Beacon, New Orleans~~, LA	29° 52' 43.87808" N	089° 56' 31.38025" W	293 kHz
Muench 1989, ~~Grand Isle, LA~~	29° 15' 57.~~30111~~ 28905" N	089° 57' 17.~~39008~~ 38080" W	2.7745 MHz

H.4 No horizontal control stations were established by the MT MITCHELL during this survey.

H.5 Refer to the Electronic Control Report submitted for OPR-S-K904-MI-93 for a description of station recovery and verification procedures of station Muench that was accomplished during the 1993 field season for this project.

H.6 Localized thunderstorms occasionally downgraded the signals of the DGPS stations. Data collection would stop until the signal was regained or control was switched to another DGPS station. There were three independent DGPS stations available for use. The NOAA HF station at Grand Isle and the USCG New Orleans beacon served as the primary control and for reference checks. The USCG Galveston beacon was used as a backup station.

I. HYDROGRAPHIC POSITION CONTROL

I.1 The primary method of sounding position control was Differential Global Positioning System (DGPS).

I.2 In accordance with the Field Procedures Manual (FPM), the maximum expected positional error (EPE) for this survey was 15 meters (1.5 mm at a survey scale of 1:10,000). At no time in this survey did the EPE consistently exceed 15 meters.

I.3 On each launch there is a GPS receiver, a beacon receiver for U.S.C.G. differential radiobeacons, and a receiver for our own HF beacon. The units used are as follows:

VESSEL #	MODEL	S/N	DAYS USED
2223	Ashtech DGPS Receiver	700417B1129	168-208
2223	Magnavox MX50R Beacon Receiver	213	168-208
2223	LRD HF Beacon Receiver	249	168-208
2223	GPS Antenna	700391A0518	168-208
2225	Ashtech DGPS Receiver	700417B1129	168-208
2225	Magnavox MX50R Beacon Receiver	036	168-208
2225	LRD HF Beacon Receiver	204	168-208
2225	GPS Antenna	700391A0517	168-208

I.4 As stated in section H.3, three DGPS reference stations were used: USCG Galveston, USCG New Orleans, and a NOAA HF Flyaway system at Grand Isle, LA. To ensure EPE's of less than 15 meters the following $HDOP_{max}$'s were determined using the formula from FPM section 3.4.2.

Station	ESE	EDE	MAX HDOP
NOAA HF	4	1.17	3.6
USCG Galveston	4	5.15	2.3
USCG New Orleans	4	1.54	3.4

DGPS performance checks were performed by comparing positioning of two independent DGPS stations. The inverse distance between the two independent stations' positions was computed to ensure it did not exceed the EPE_{max} of 15 meters. The method used was the "two boats in the water method". Both launches departed the ship and brought up HDAPS using different DGPS reference stations. As the launches came together the OIC's or Survey Technicians simultaneously marked their position and printed it out. The Easting and Northing values from each boat, along with the HDOP and number of satellites were entered into a spreadsheet for computation of position error.

The performance checks were attempted once per week but subject to down days due to the abundance of bad weather. Checks were also accomplished whenever any positioning equipment was changed in the launches. There were a total of nine performance checks performed on day numbers 168, 170, 172, 188, 191, 200, 201, and 205. The maximum inverse of all the performance checks was 6.6 meters. A copy of the performance checks are located in **Separate III.** FILED WITH THE ORIGINAL FIELD RECORDS

I.5 No calibration data is applied to the DGPS raw positioning data.

I.6 a) No unusual methods of operation were employed with the DGPS equipment.

b) The primary control was the NOAA HF beacon and the New Orleans Coast Guard beacon.

c) On occasion, DGPS correctors would not be received for a few seconds at a time generally due to localized thunderstorms. After 30 seconds of losing correctors, HDAPS goes into a dead reckoning (DR) mode. After 30 seconds of being in DR mode, HDAPS stops data collection. Survey operations would stop until the signal returned or the control beacon was changed. If the signal was lost for only a few seconds, and the OIC's felt that the course was steady through the period, data collection would continue.

d) No weak signals or poor geometric configurations were observed.

e) No systematic errors were observed.

f) Antenna positions were corrected for offset and layback, and referenced to the position of the DSF-6000N transducer. These correctors were located in the HDAPS Offset table, and applied on-line to the positioning algorithm. Launch MI-3 (VesNo 2223) used offset table 3; MI-5 (VesNo 2225) used table 5. Refer to **Separate III** for a copy of offset tables used during this survey. FILED WITH THE ORIGINAL FIELD RECORDS

g) Offset and layback distances for the boom (tow point) were located in the HDAPS Offset table and applied on-line. The values of the offsets and laybacks are included in the same tables as discussed in section **f** above. These values, along with the cable length, towfish height, and depth of water, were used by the HDAPS system to compute the position of the towfish.

J. SHORELINE

No shoreline areas are present within the limits of this survey.

K. CROSSLINES

Since this is an item investigation with side scan sonar, crosslines are not required.

L. JUNCTIONS

The survey junctions with two other item investigation surveys, FE-397SS and FE-401SS, also conducted at the same time as this survey. The survey sheets overlap, but not the search radii for the AWOIS items. Therefore, no sounding or side scan sonar contact comparisons can be made between the surveys. THERE ARE NO HYDROGRAPHIC JUNCTIONS

Detached positions of above waterline items shared between survey FE-397SS are discussed in section **O.4.**

M. COMPARISON WITH PRIOR SURVEYS SEE ALSO THE EVALUATION REPORT

M.1 The following survey is the most recent prior survey in the FE-398SS survey area available for comparison:

Registry #	Scale	Date
H-6154	1:40,000	1936
H-6173	1:40,000	1936

M.2 Twelve soundings from H-6154 were compared to observed depths from the final excess plot of this survey. Nearly all the soundings from this survey are deeper than those from H-6154. On average the observed depths are 1.2 meters (4 FT) deeper. There were no significant shoaling trends observed in this survey when compared with the 1936 survey.

M.3 No significant features in the survey area are present on H-6154. CONCUR

M.4 Of the twelve soundings from the 1936 survey ten fell within a difference range of 0.9 (3 FT) to 1.6 meters (5 FT) shoaler than the observed depths for this survey. The other two comparisons differed by 0 and 2.8 meters (9 FT) shoaler.

M.5 There were no contemporary non-NOS surveys in this area available for comparison.

N. ITEM INVESTIGATION REPORTS SEE ALSO THE EVALUATION REPORT

There were three AWOIS items in the survey area. Descriptions are as follows:

AWOIS 8431

State and Locality: Louisiana, Eastern Ship Shoal

Charted Position: 28/53/00.85 N 090/43/00.32 W POSITION APPROXIMATE

Datum: MLLW Reported Depth: Unknown

Type of Feature: Dangerous wreck, position approximate

Source: NM 24/66 -- Ship Shoal-Wreck information; an offshore lift boat has been reported sunk in approximate position Lat. 28-53N, Long. 90-43W.

Survey Requirements: 200% side scan sonar coverage, 3000 meter search radius, diver investigation, salvage documentation.

Method of Investigation: A 3000 meter search radius was established for 200% side scan sonar coverage.

Results of Investigation: The search radius for AWOIS 8431 overlaps with the radii for AWOIS 8433 and completely covers the search radius for AWOIS 8435. Only 100% coverage was completed during this survey period for all AWOIS items. No contacts resembling the AWOIS description were observed in the search radius of the 100% coverage. There was a significant contact discovered within the search radius, discussed in Development D1.

Comparison with Prior Surveys: Refer to section M.

Comparison with Chart: Refer to section O. Although a danger to navigation report was filed, it was not this AWOIS item. See Development D1 for discussion of this report.

Recommendation: Maintain charted wreck until completion of 200% coverage. ✓
DO NOT CONCUR. SEE SECTION N.1 OF THE EVALUATION REPORT.

AWOIS 8433

State and Locality: Louisiana, Eastern Ship Shoal

Charted Position: 28/53/36.85 N 090/43/24.32 W POSITION APPROXIMATE

Datum: MLLW Reported Depth: 8 feet reported ✓

Type of Feature: Dangerous wreck, position approximate

Source: NM 37/62 -- Cabin cruiser ALLEGRO, 42 feet long, reported sunk in about 22 feet in approximate position Lat. 28-53-36N, Long. 90-43-24W. 8 feet reported over wreck.

Survey Requirements: 200% side scan sonar coverage, 3000 meter search radius, diver investigation, salvage documentation

Method of Investigation: A 3000 meter search radius was established for 200% side scan sonar coverage.

Results of Investigation: The search radius for AWOIS 8433 overlaps with the radii for AWOIS 8431 and completely covers the search radius for AWOIS 8435. Only 100% coverage was completed during this survey period for all AWOIS items. No contacts resembling the AWOIS description were observed in the search radius of the 100% coverage. There was a significant contact discovered within the search radius, discussed in Development D1.

Comparison with Prior Surveys: Refer to section M.

Comparison with Chart: Refer to section O. One danger to navigation report was filed but it was not for this AWOIS item. See Development D1 for discussion of this report.

Recommendation: Maintain charted wreck until completion of 200% coverage. ✓
DO NOT CONCUR. SEE SECTION N.2. OF THE EVALUATION REPORT.

AWOIS 8435

State and Locality: Louisiana, Eastern Ship Shoal

Charted Position: 28/53/48.85 N 090/42/32.32 W

Datum: MLLW Reported Depth: Unknown

Type of Feature: Obstruction

Source: LNM 46/74 -- Well located in Lat. 28-53-48N, Long. 90-42-32W, is reported to have wreckage at site below surface. Temporarily marked by QK FL white light 10 feet above surface.

Survey Requirements: 400% side scan sonar coverage, 500 meter search radius, diver investigation, salvage documentation.

Method of Investigation: A 500 meter search radius was established for 400% side scan sonar coverage.

Results of Investigation: The search radius for AWOIS 8435 is enclosed within the radii for AWOIS 8431 and AWOIS 8433. Only 100% coverage was completed within this search radius. Platform "Murphy PL-20-074-13-1" (fix# 129) was positioned at the charted AWOIS position. The side scan trace revealed no wreckage at the base of this platform. No other contacts resembling this AWOIS item were found in the search area during the survey period.

Comparison with Prior Surveys: Refer to section M.

Comparison with Chart: Refer to section O. One danger to navigation report was filed but it was not for this AWOIS item. See Development D1 for discussion of this report.

✓

Recommendation: Maintain charted obstruction until completion of survey.
DO NOT CONCUR. SEE SECTION N.3 OF THE EVALUATION REPORT

Other Contacts

As stated previously, several contacts were discovered and entered into the contact tables. Most of the items were later labeled "No Further Investigation" (NFI). After careful examination of fathograms and sonargrams, most of these contacts were explained as bottom texture characteristics, sea state interference, fathometer/side scan interference, depressions and scours, fish, or small pieces of scrap metal and other rig debris. Although many of these are actual contacts on the bottom, the majority of them are not noteworthy for charting purposes. A few contacts were entered after the survey period or could not be developed due

to time constraints. They were labeled "Pending Survey Completion (PSC)". **Separate V** contains the contact tables. FILED WITH THE ORIGINAL FIELD RECORDS

One contact was found to be significant and is described as contact "D1". The description of the development follows. In addition, one possibly significant contact was found near the end of the survey period and developed. It is labeled "D8" and is discussed in the following description. Other contact developments are also listed.

Development D1

LAT:	28° 53' 04.635" N	WATER DEPTH (RAW):	11.5 meters
LONG:	090° 42' 48.449" W	CONTACT HEIGHT:	1.2 meters

History:	DN	REF. FIX #'S	ACTIVITY
	172	1191.47,1193.49	100% SSS
	191	1396.19,1398.51	DEVELOPMENT
	201	501	DIVE DETACHED POSITION

Results of Investigation: The contact was first seen on DN 172 and was considered significant and entered in the contact tables. On DN 191 the site was developed with 50 meter range scale. This development confirmed the need for diver investigation. Divers found a metal cylindrical tank partially embedded in the bottom. The exposed length is 9.1 (30 FT) meters with the highest point rising 1.2 (4 FT) meters off the bottom. Large tires cover part of the tank (see sketch in ~~Appendix I~~ SEPARATE IV APPENDED TO THIS REPORT). The pertinent information is as follows:

Leadline least depth of item	= 11.8 meters
Leadline least depth of item with predicted tides for 21 July at 1312 CDT	= 11.6 meters
Fathometer depth of water with predicted tides for 21 July at 1312 CDT	= 12.8 meters
Fathometer least depth of item with just offset and velocity	= 11.7 meters
Fathometer least depth of item with predicted tides for 21 July at 1312 CDT	= 11.5 meters

NOTE: A danger to navigation report was filed for this item. A copy of the report is ~~in Appendix I.~~ APPENDED TO THIS REPORT

Recommendation: Chart DANGEROUS Submerged Obstruction at: CONCUR. CHART AS A 38 OBSTN WITH A DANGER CURVE. ✓

Latitude 28° 53' 04.635" N
Longitude 090° 42' 48.449"W.

Least depth = 11.6 meters (38 ft)
Reduced to MLLW ~~with predicted tides~~

Development D2

History:	DN	REF. FIX #'S	ACTIVITY
	172	1187.06	100% SSS
	200	5323.36,5325.13	DEVELOPMENT

Results of Investigation: The contact was first seen on DN 172 and was considered significant and entered in the contact tables. The initial contact height was 1.1 meters. On DN 200 the site was developed with 50 meter range scale (fixes 5327-5338). This development confirmed the object to be about 10 meters long and less than 0.5 meters wide. The calculated height based on the shadow given by the 50 meter range scale development yielded 0.7 meters (2.3 FT) and therefore considered insignificant for the water depth the object lies in (13.0 meters) (42 FT). Hydro development over the object did not yield any significant feature.

Recommendation: Do not chart, no further investigation. Concur ✓

Development D3

History:	DN	REF. FIX #'S	ACTIVITY
	172	5253.26	100% SSS

Results of Investigation: The contact was first seen on DN 172 and was considered significant and entered in the contact tables. The initial contact height was 1.1 meters. On DN 200 the site was developed with 50 meter range scale (fixes 5339-5347). No significant contact was located during the development. The initial contact on DN 172 was explained as something biological as it did not give either a good hit or shadow.

Recommendation: Do not chart, no further investigation. Concur ✓

Development D4

History:	DN	REF. FIX #'S	ACTIVITY
	191	1402.66	100% SSS

Results of Investigation: The contact was first seen on DN 191 and was considered significant and entered in the contact tables. The initial contact height was 3.3 meters. On DN 200 the site was developed with 50 meter range scale (fixes 5348-5354). No significant contact was located during the development. The initial contact on DN 191 was explained as something biological as it did not give either a good hit or shadow.

Recommendation: Do not chart, no further investigation. Concur ✓

Development D5

History:	DN	REF. FIX #'S	ACTIVITY
	205	1796.09, .11, .13	100% SSS

Results of Investigation: The contacts were first seen on DN 205 and were considered significant and entered in the contact tables. On DN 206 the site was developed with 50 meter range scale (fixes 1912-1916). No significant contact was located during the development. The initial contacts on DN 205 were explained as something biological as they did not give either a good hit or shadow.

Recommendation: Do not chart, no further investigation. Concur ✓

Development D6

History:	DN	REF. FIX #'S	ACTIVITY
	205	1806.65	100% SSS

Results of Investigation: The contact was first seen on DN 205 and was considered significant and entered in the contact tables. On DN 206 the site was developed with 50 meter range scale (fixes 1893-1896). Contacts were found during the development, but none were significant or resembled the contact on DN 205. The initial contact was explained as platform garbage or parts of pipelines since it was discovered very near the MURPHY 19B complex (see section O.4 for description of these platforms).

Recommendation: Do not chart, no further investigation. Concur ✓

Development D7

History:	DN	REF. FIX #'S	ACTIVITY
	205	1820.28,1820.32	100% SSS

Results of Investigation: These contacts were first seen on DN 205 and were considered significant and entered in the contact tables. On DN 206 the site was developed with 50 meter range scale (fixes 1907-1911). The development did not yield any contacts.

Recommendation: Do not chart, no further investigation. Concur ✓

Development D8

LAT:	28° 53' 49.2" N	WATER DEPTH (RAW):	8.5 meters
LONG:	090° 42' 05.9" W	CONTACT HEIGHT FROM SSS:	1.5 meters

History:	DN	REF. FIX #'S	ACTIVITY
	205	5735.52	SSS 100%
	206	1900.33	DEVELOPMENT

Results of Investigation: This contact was discovered on DN 205 in the area where jack-up rig SOUTHERN CROSS 6 had previously been located. Radio communications were established with SOUTHERN CROSS 6 initially upon arrival in the project area. We were informed that they were conducting diving operations for recovering pipelines in the area. We were told to maintain at least 500 meters from the jack-up rig. Once the jack-up rig left the area, 100% SSS was obtained in that area and contact "D8" was found. There is evidence of the pipelines on the side scan traces in this area, especially around "D8". Many of these pipelines were entered as contacts and labeled under development "D8" (DEV D8 in the contact tables).

Recommendation: No charting recommendation pending survey completion. Do not Chart ✓

FATHOMETER DEVELOPMENTS

Several fathometer spikes were found during side scan sonar collection and were later developed to ensure quality of the fathometer trace. They are listed here:

DN	REF. FIX #'S	Spike Height
201	5502.75	1.5 m
201	1627.0, .22, .36	1.5, 1.0, 2.0 m
202	1631.15	0.6 m
202	5698.8	1.5 m

On DN 206 hydro developments (fixes 1885-1892) were done on all spikes except 5502.75. This spike was later determined to be located at a platform. The other spike developments proved unrepeatability and the original fathometer spikes were explained as biological material in the water column. Concur ✓

O. COMPARISON WITH THE CHART *SEE ALSO THE EVALUATION REPORT.*

O.1 The following charts are affected by this survey:

Chart #	Edition	Date	Scale
11340	56th	July 17, 1993	1:458,596
11357	29th	October 2, 1993	1:80,000

During the period of survey operations, there have been no pertinent notice to mariner updates from the above charts affecting the survey area. Chart 11357 is due to have a new edition released in July, 1994. Chart 11340 is due to have a new edition released in August, 1994.

O.2 **a)** A danger to navigation report referencing item "D1" was submitted on 21 July 1994. A copy of the report is ~~included in Appendix I~~. *APPENDED TO THIS REPORT*

O.3 **b)** The following new danger to navigation as described in section **N** was found:

Item	Latitude	Longitude	Position Number
Subm. Obstruction	28° 53' 04.635" N	090° 42' 48.449" W	501.0

O.4 The thirteen charted soundings from chart 11357 which lie in the search radii were compared to soundings from this survey. On average, soundings from this survey are 1.1 meters deeper than the charted depths. The maximum difference was 2.2 meters while the minimum difference was 0.1 meters. Sounding data from this survey should supersede prior survey data. There are no maintained channels, safety fairways, or traffic schemes within the survey area. *Concur ✓*

O.4 The following non-sounding features are in the survey area:

Note: Positions are taken from the HDAPS Detached Position utility. Polaroid pictures of the features accompany the survey data.

Item	Designation	DP Fix	Lat.	Lon.
A Platform	MURPHY PL-19-073-37-1	101	28/53/57.00	090/41/07.82
B Platform	MURPHY PL-19-073-35-1	102	28/53/54.12	090/41/18.04
C Platform	MURPHY PL-19-073-34	103	28/54/04.10	090/41/18.22
D Platform	MURPHY PL-19-073-29	104	28/54/04.20	090/41/28.22
E Platform	MURPHY PL-073-25-1	105	28/53/39.85	090/41/47.52
F Platform*	MURPHY PL-19-B (West)	107	28/53/40.65	090/41/51.85
G Platform*	MURPHY PL-19-HDR (center)	109	28/53/41.59	090/41/52.84
H Platform*	MURPHY PL-19-B (East)	112	28/53/38.88	090/41/55.83
I Platform	MURPHY PL-20-074-24	113	28/53/38.98	090/42/08.29
J Platform	MURPHY PL-19-073-21	114	28/53/54.84	090/41/42.55
K Platform	MURPHY PL-12-072-47	115	28/54/09.22	090/41/48.68
L Platform	MURPHY PL-12-072-H	116	28/54/05.55	090/41/43.51
M Platform	MURPHY PL-19-073-22-1	117	28/53/55.85	090/41/50.08
N Platform	MURPHY PL-19-073-33-1	118	28/53/56.06	090/41/54.29
O Platform	MURPHY PL-19-073-44-1	119	28/53/58.00	090/41/54.14
P Platform	MURPHY PL-19-073-9-1	120	28/53/57.71	090/41/57.69
Q Platform	MURPHY PL-20-074-40-1	121	28/53/52.60	090/42/10.70
R Platform	MURPHY PL-20-074-38-1	122	28/53/51.94	090/42/16.40
S Platform	MURPHY PL-20-074-39-1	123	28/53/54.36	090/42/19.22
T Platform	MURPHY PL-20-074-28-1	124	28/53/47.17	090/42/16.24
U Platform	MURPHY PL-20-074-35-1	125	28/53/48.59	090/42/20.09
V Platform	MURPHY PL-20-074-36-1	126	28/53/49.06	090/42/24.25
W Platform	MURPHY PL-20-074-33-1	127	28/53/50.45	090/42/28.33
X Platform	MURPHY PL-20-074-32-1	128	28/53/50.48	090/42/30.13
Y Platform**	MURPHY PL-20-074-13-1	129	28/53/48.86	090/42/32.52
Z Platform***	~~MO-SP-791-15~~ MO-SP-11-15	130	28/54/23.95	090/43/32.50
Platform	MO-PL-10-27	1468	28/56/30.72	090/44/14.99
Platform	MO-PL-11-24	1469	28/56/24.02	090/44/27.53
Platform	MO-PL-11-23	1470	28/56/25.07	090/44/33.50
Platform	MO-SP-10-D	1471	28/56/44.62	090/44/40.98
Platform	MO-PL-11-20	1472	28/55/52.81	090/42/17.51
Platform	OCS-071-11-18	1473	28/55/50.98	090/42/42.12
Platform	MO-PL-11-F	1474	28/55/49.53	090/42/44.41
AA Platform	MO-PL-11-10	1475	28/55/34.69	090/42/48.95
BB Platform	MO-PL-11-7	1476	28/55/28.14	090/42/37.28
Platform	MESA-SS-115-1	#	28/50/37.20	090/45/22.20
Rig	OCEAN EXPLORER	##	28/51/44.90	090/42/22.70

OUTSIDE OF SHEET LIMITS

* Three large platforms connected by catwalks, sometimes referred as just 19B or B complex.

** Corresponds to position of AWOIS 8435 description mentioned earlier in section N.

*** Also has a smaller label of MO-SP-11-15.

\# No D.P. taken. Platform exists in charted position confirmed by MT MITCHELL anchor bearings.

No D.P. taken. Position from side scan contact utility confirmed by MT MITCHELL anchor bearings.

The 37 items listed above represent all of the permanent features visible above the water line within the boundaries of the survey sheet except for those shared with survey FE-397SS. A line defined by these positions: 28/55/00 N, 090/42/30 W and 28/54/00 N, 090/41/00 W, was drawn through the overlap of this survey and survey FE-397SS. Together, comparisons were made to ensure that all features were included in either one of the surveys. We are confident that no visible feature within the sheet boundaries was overlooked.

All of the items are platforms except for the derelict drilling rig OCEAN EXPLORER. It is recommended that all platforms, privately maintained buoys, and visible obstructions which lie within the sheet boundaries be removed from the chart and chart the above platforms using the positions from this survey except for platform MESA-SS-115-1 which was accurately charted. CONCUR. PRIVATELY MAINTAINED BUOYS AND OBSTRUCTIONS ARE NOT SHOWN ON THE 30TH EDITION OF CHART 11357. ✓

O.6 No changes to the scale or coverage of the published charts of the survey are recommended. By monitoring radio communications between local users, most positions for navigation are referred to by the offshore oil and gas leasing block coordinate system created by the Bureau of Land Management. This includes; oil rigs and platform tenders, Department of Minerals, and the U.S. Coast Guard. Either the overprinting of block designations on the charts, or two sided charts with block descriptions on one side, will increase the suitability of the charts for the local area.

P. ADEQUACY OF SURVEY SEE ALSO THE EVALUATION REPORT.

P.1 All AWOIS items reported on this sheet have NOT been resolved at the conclusion of this survey period.

P.2 This survey is incomplete. Only 100% of side scan sonar coverage has been completed. The one danger to navigation should be updated for the chart. Fixed objects above the waterline (D.P.s) are adequate for the purpose of updating the chart.

Q. AIDS TO NAVIGATION

Q.1 The MT MITCHELL conducted no correspondence with the U.S. Coast Guard regarding floating aids to navigation.

Q.2 There are no Coast Guard maintained aids to navigation on this survey sheet.

Q.3 No other aids were located during the survey.

Q.4 No bridges, overhead cables or pipelines are within the survey limits.

Q.5 **a)** No submarine cables crossing to shore are present within the survey limits.

b) There are several submarine pipelines within the survey limits. These pipelines form a network connecting the wellheads and platforms in the area.

c) There are no ferry routes in the survey area.

Q.6 There are no ferry terminals in the survey area.

R. STATISTICS

		VN 2223	VN 2225	Total
R.1	a) Number of positions:	990	981	1971
	b) Lineal nautical miles of SSS/sounding lines:	161.9	154.1	316.0
R.2	a) Total square nautical miles of hydrography:	12.0	12.2	24.2
	b) Total days of production:	10	9	10*
	c) Detached positions:	0	35	36**
	d) Bottom samples			0
	e) Tide stations:			2
	f) Current stations			0
	g) Velocity casts:			3
	h) Magnetic stations			0
	i) XBT drops			0
	j) Dives:			2

* Survey conducted during 10 calender days.
** One Detached Position was obtained by VN 2226 during the dive operations.

No bottom samples, current stations, magnetic stations or XBT drops were established or performed.

S. MISCELLANEOUS

S.1 **a)** No unusual silting was noted during this survey.

b) All unusual submarine features have been discussed previously.

c) No anomalous tidal conditions were encountered.

d) There is a current running in an East-West direction in the project area. The current can be as strong as 1.5 knots.

e) No magnetic anomalies were encountered during this survey.

S.2 No bottom samples were taken or submitted to the Smithsonian Institution.

T. RECOMMENDATIONS

T.1 All inadequacies have been noted in section **P.**

T.2 There is no present or planned construction or dredging that will affect results of this survey. However, this area is densely populated with oil rigs, platforms, and wellheads. It is probable that additional items may appear, or existing items may move, due to the dynamic nature of the oil industry.

T.3 There were no unusual conditions or sea features which require further investigation other than the resolving of the AWOIS items and significant contacts of this survey.

U. REFERRAL TO REPORTS

Coast Pilot Report - Submitted August 12, 1994 to N/CG2223 with a copy to N/CG244.

SUBMITTAL SHEET
Survey FE-398SS

This descriptive report accurately describes all activities pertaining to the control, collection and processing of data for this survey, and is respectfully submitted by:

Jonathon A. Mann

ENS Jonathon A. Mann, NOAA

APPENDIX III
List of Horizontal Control Stations

Station 001 - MUENCH 1989

LAT: 29° 15' 57.~~30111~~ 28905" N
LONG089° 57' 17.~~39008~~ 38080" W ANTENNA ELEVATION: -22.555 meters

CARTOGRAPHIC CODE: 890

SOURCE: Coastal Survey Unit, from a 1989 Whiting survey.

Station 002 - ~~United States Coast Guard~~, English Turn, LA ~~Louisiana Differential Beacon~~

LAT: 29° 52' 43.87808" N
LONG089° 56' 31.38205" W ANTENNA ELEVATION: -23.85 meters

CARTOGRAPHIC CODE: 890

SOURCE: Hydrographic Surveys Branch, July 16, 1993.

Station 003 - ~~United States Coast Guard~~, Galveston, TX ~~Texas Differential Beacon~~

LAT: 29° 19' 45.09171" N
LONG094° 44' 10.48430" W ANTENNA ELEVATION: -20.154 meters

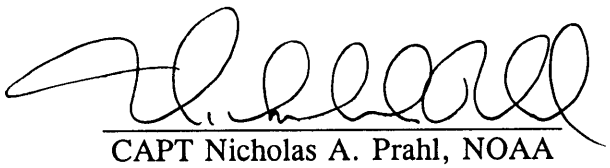
CARTOGRAPHIC CODE: 890

SOURCE: Hydrographic Surveys Branch, April 12, 1992.

Letter of Approval

Registry No. FE-398SS

Field operations of this survey were conducted under my supervision with frequent personal checks of progress and adequacy. This report and field sheets have been closely reviewed for accuracy pertaining to the control, collection and processing of data for this survey. As noted in this report this survey is incomplete for updating the AWOIS database. The hydrography and above waterline features are adequate for updating the chart.



CAPT Nicholas A. Prahl, NOAA
Commanding Officer, NOAA Ship MT MITCHELL

UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic Atmospheric Administration
Office of NOAA Corps Operations
NOAA Ship MT. MITCHELL S-222
439 W. York Street
Norfolk, VA 23510-1114

21 July 1994

MEMORANDUM FOR: Rear Admiral Freddie L. Jeffries, NOAA
Director, Atlantic Marine Center

FROM: Captain Nicholas A. Prahl, NOAA
Commanding Officer, NOAA Ship MT MITCHELL

SUBJECT: Danger to Navigation Reports

On 21 July 1994, MT MITCHELL submitted three reports of dangers to navigation (Date/Time Groups: 212125Z, 212126Z, 212127Z JUL 1994).

The messages were addressed to NOAAMOA NORFOLK VA, CCGDEIGHT NEW ORLEANS, LA//OAN and DMAHTC (NAVWARN) WASHINGTON DC//MCNM//. A copy of these messages and accompanying chartlets have been attached.

In accordance with HSG 66, a copy of this memorandum, radio message, and chartlet will be forwarded to N/CG221.

Attachments

cc: Mr. Dennis Romesburg N/CG221

NOAA FORM 76-155
(11-72)

U.S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

SURVEY NUMBER

FE-398SS

GEOGRAPHIC NAMES

Name on Survey	A ON CHART NO. 11357	B ON PREVIOUS SURVEY NO.	C ON U.S. QUADRANGLE MAPS	D FROM LOCAL INFORMATION	E ON LOCAL MAPS	F P.O. GUIDE OR MAP	G RAND MCNALLY ATLAS	H U.S. LIGHT LIST	K	
DERNIERES, ISLES (title)	X		X							1
LOUISIANA (title)	X		X							2
MEXICO, GULF OF	X		X							3
										4
										5
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Approved:

Chief Geographer

MAY 26 1995

NOAA FORM 76-155 SUPERSEDES C&GS 197

07/06/95

HYDROGRAPHIC SURVEY STATISTICS
REGISTRY NUMBER: FE-398SS

NUMBER OF CONTROL STATIONS	2
NUMBER OF POSITIONS	1971
NUMBER OF SOUNDINGS	12879

	TIME-HOURS	DATE COMPLETED
PREPROCESSING EXAMINATION	179.50	03/02/95
VERIFICATION OF FIELD DATA	170	04/28/95
QUALITY CONTROL CHECKS	11	
EVALUATION AND ANALYSIS	23	
FINAL INSPECTION	14	06/02/95
COMPILATION	4	06/07/95
TOTAL TIME	402	

ATLANTIC HYDROGRAPHIC BRANCH APPROVAL 07/05/95

HDAPS Graphic Edit version: 1.06 Graphic Sounding Edit Screen 14:39:34

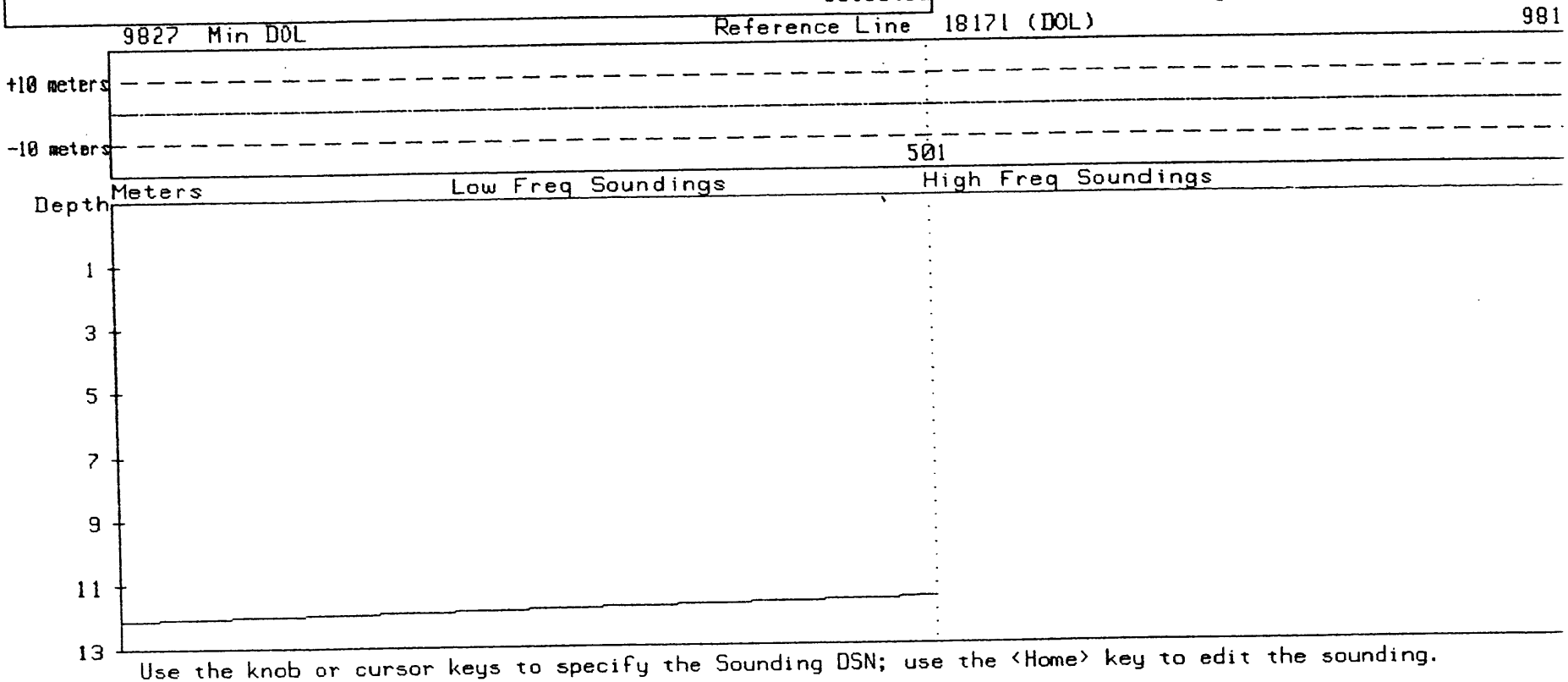
Project:	SHIPSHOAL	DSN:	3	Depth Units :	Meters
Sheet Number:	4	Fix.:	501	Primary Beam :	High
DAS Year:	1994	Time:	181243.74		
DAS version:	6.70	Pos-Dep dTime:	.08		
		Position DAL:	18172	Predicted Tide:	-.2 D
Vessel Number:	2226	Position DOL:	9822	Total Draft :	.5 D
Day Number:	201			Sound Velocity:	.3 D

Sounding Number:	1	2	3	4	5
High Frequency :	8888.8	8888.8	8888.8	12.3	10.9
Low Frequency :	8888.8	8888.8	8888.8	12.5	11.2
Heave Corrector:	0.0	0.0	0.0	0.0	0.0
Corrected Depth:	8889.4	8889.4	8889.4	12.9	11.5
Time until 5th :	0.0 sec	2.2 sec	4.4 sec	8.8 sec	0.0sec
Reference DOL :	9822	9825	9828	9835	9822
					Selected

D.P. Flag: 1 Carto #: 711
Excess flag: 0
Easting: 49822.0 Lat: 028:53:04.635
Northing: 24172.8 Lon: 090:42:48.449

Fix Record
Selected Record

Raw sounding



Use the knob or cursor keys to specify the Sounding DSN; use the <Home> key to edit the sounding.

User 1 C

EDIT | Continue | RUN | SCRATCH | LOAD BIN "" | LIST BIN | RE-STORE ""

R 21212523 JUL 94
FM NOAAS MT MITCHELL
TO NOAAMOA NORFOLK VA
CCGDEIGHT NEW ORLEANS LA //OAN
MAHTC (NAVWARN) WASHINGTON DC//MCNM//
B.
UNCLAS

SUBJ REPORT OF DANGER TO NAVIGATION

HYDROGRAPHIC SURVEY REGISTRY NUMBER: FE-398SS
SURVEY TITLE: LOUISIANA COAST ITEM INVESTIGATION
STATE: LOUISIANA
GENERAL LOCALITY: GULF OF MEXICO
SUBLOCALITY: 12 NM SW OF ISLE DERNIERES
PROJECT NUMBER: OPR-SK904-MI-94, NOAA SHIP MT MITCHELL

THE FOLLOWING ITEM WHICH IS A POTENTIAL DANGER TO NAVIGATION WAS DISCOVERED DURING HYDROGRAPHIC SIDE SCAN SONAR SURVEY OPERATIONS BY THE NOAA SHIP MT MITCHELL:

OBJECT DISCOVERED: A SUBMERGED METAL CYLINDRICAL TANK WAS DISCOVERED AT POSITION 28-53-04.635N6, 090-42-48.449W4. THE CYLINDER IS PARTIALLY EMBEDDED IN THE SILTY BOTTOM ORIENTED IN A NORTHWEST DIRECTION. THE EXPOSED LENGTH IS 30 FEET. TIRES SURROUND THE CYLINDER SURFACE. THE LEAST DEPTH OF 37.7 FEET, CORRECTED TO MLLW USING PREDICTED TIDES, OCCURS AT THE END OF EXPOSED CYLINDER. THE POSITION OF THE CYLINDER WAS DETERMINED USING DIFFERENTIAL GPS. THE CHARTED WATER DEPTH IN THIS AREA IS 35 FEET.

THIS ITEM AFFECTS NAUTICAL CHARTS:

CHART NUMBER	11357
EDITION NUMBER	29TH
DATE	02 OCT 93
REPORTED DEPTH	37.7 FEET
CHARTED HORIZ. DATUM	NAD 83
GEOGRAPHIC POSITION	
LATITUDE	28-53-04.635N6
LONGITUDE	090-42-48.449W4

QUESTIONS CONCERNING THIS REPORT SHOULD BE DIRECTED TO THE ATLANTIC MARINE CENTER AT (804) 441-6206.
BT
NNNN

NOAA Ship MT MITCHELL
Least-Depth Dive Investigations

Dive Operations Information: GAUGE S/N __ 0-21 m S/N 245419
— 0-42m S/N 245418
— 0-70m S/N 8302079N

DATE/DN: 20 JUL 94/201 Project/Sheet: SK904MI94/MI-10-05-94

Dive Supervisor: SORACCO Dive Item #: D1

Vessel #: 2226 AWOIS #: —

DIVE #

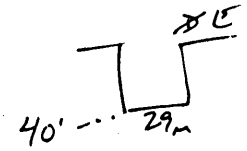
DIVERS: 1 VAN DEN AMEELE 2 MANN

TIME IN: 1214 Pressure In: 3000

TIME OUT: ~~1243~~ 1301 Pressure Out: 1000

BOTTOM TIME: ~~29~~ 38 MAX DEPTH: 45

PROFILE:



DIVERS DESCENDED DOWN BUOY LINE. DISCOVERED METAL, ~~ALLOYED~~ CYLINDRICAL TANK. BUOY MOVED TO LEAST DEPTH ON SHORT STAY.

SURROUNDING DEPTH = 12.3M

PNEUMOFATHOMETER CALIBRATED: Y N

LEAST-DEPTH DETERMINATION ☐ Pneumogauge ☑ Leadline ☐ Depth gage /Other

DP FIX NUMBER(s): 501 AVERAGE DEPTH READING: 11.8 LEADLINE

FATHOMETER DEPTH: 10.9 TIME OF READINGS (GMT): 18:12:43

DRAFT CORRECTOR: + 0.5 PREDICTED TIDE CORR.: - 0.2

VELOCITY CORR.: + 0.3 CORRECTED LEAST-DEPTH: 11.6 (LEADLINE) 11.5 FATHO

PRED. TIDE CORR.: -~~-~~0.2 (positive in Table) HAZNAV REPORT FILED: (Y) N 21 JUL

READING #1: _____

READING #2: _____

READING #3: _____

AVG: _____

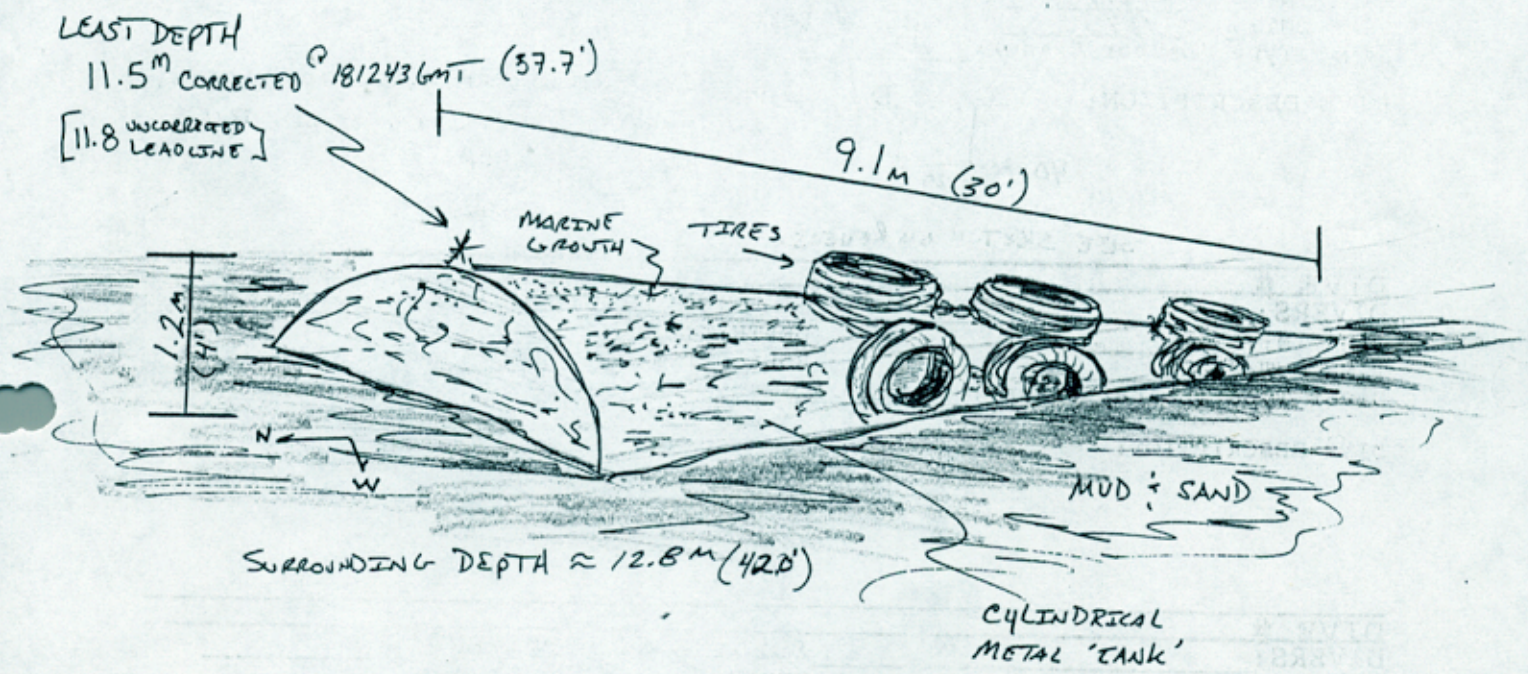
POSITION / SUPPORTING INFORMATION

LAT: 28° 53' 04.635" N LONG: 090° 42' 48.449" W

N 24172.8 E 49822.0

D1

DP# 501


LEAST DEPTH
11.5M CORRECTED @ 181243GMT (37.7')
[11.8 UNCORRECTED LEADLINE]
9.1M (30')
MARINE GROWTH
TIRES
1.2M (4')
N
W
MUD & SAND
SURROUNDING DEPTH ≈ 12.8M (42')
CYLINDRICAL METAL 'TANK'

ATLANTIC HYDROGRAPHIC BRANCH
EVALUATION REPORT FOR FE-398SS (1994)

This Evaluation Report has been written to supplement and/or clarify the original Descriptive Report. Sections in this report refer to the corresponding sections of the Descriptive Report.

H. CONTROL

Horizontal control used for this survey during data acquisition is based upon the North American Datum of 1983 (NAD 83). Office processing of this survey is based on these values. The smooth sheet has been annotated with ticks showing the computed mean shift between the NAD 83 and the North American Datum of 1927 (NAD 27).

To place this survey on the NAD 27, move the projection lines 0.856 seconds (26.36 meters or 2.63 mm at the scale of the survey) north in latitude, and 0.327 seconds (8.85 meters or 0.85 mm at the scale of the survey) west in longitude.

M. COMPARISON WITH PRIOR SURVEYS

Hydrographic

H-6154 (1936) 1:40,000
H-6173 (1936) 1:40,000

1. Prior survey H-6154 (1936) is common to the southern half of the present survey. Present survey soundings generally range from 2 to 5 feet (0^6 to 1^5 meter) deeper than prior survey soundings.

2. Prior survey H-6173 (1936) is common to the northern half of the present survey. Present survey soundings generally range from 2 to 3 feet (0^6 to 1 meter) deeper than prior survey soundings.

A charted 18-foot (5^5 meter) sounding, in Latitude 28°53'00.85"N, Longitude 90°43'00.32"W, shown on prior survey H-6173 (1936) originates with prior survey H-2014 (1888-89). The sounding was not discussed by the hydrographer. Present survey depths are 23 to 24 feet (7 to 7^3 meters) and show no indication of shoaling or any obstruction in the immediate area. It is recommended that the 18-foot (5^5 meter) sounding be removed from the chart.

The differences in depths between the above prior surveys and the present survey can be attributed to natural causes, improved hydrographic surveying methods and equipment, and to subsidence due to the withdrawal of gas and oil from the region.

The present survey is adequate to supersede the prior surveys in the common area.

N. ITEM INVESTIGATIONS

1. AWOIS item #8431 is a charted dangerous submerged wreck, PA in Latitude 28°53'00.85"N, Longitude 90°43'00.32"W. This AWOIS item required 200% side scan sonar coverage within a 3000 meter search radius for disproval. One hundred percent side scan coverage was accomplished within the required area. Poor sea conditions and time constraints prevented completion of 200% side scan coverage. The side scan records are very good and reveal no significant wreck or wreckage within the search area. The wreck is considered disproved. It is recommended that the charted dangerous submerged wreck, PA be deleted from the chart.

2. AWOIS item #8433 is a charted dangerous submerged wreck, PA (8 ft rep) in Latitude 28°53'36.85"N, Longitude 90°43'24.32"W. This AWOIS item required 200% side scan sonar coverage within a 3000 meter search radius for disproval. One hundred percent side scan coverage was accomplished within the required area. Poor sea conditions and time constraints prevented completion of 200% side scan coverage. The side scan records are very good and reveal no significant wreck or wreckage within search area. The wreck is considered disproved. It is recommended that the charted dangerous submerged wreck, PA (8 ft rep) be deleted from the chart.

3. AWOIS item #8435 is a charted dangerous submerged obstruction in Latitude 28°53'48.85"N, Longitude 90°43'32.32"W. This AWOIS item required 400% side scan sonar coverage within a 500 meter search radius for disproval. One hundred percent side scan coverage was accomplished within the required area. Poor sea conditions and time constraints prevented completion of 400% side scan coverage. The side scan records are very good and reveal no significant submerged feature or wreckage within the search area. The submerged obstruction is considered disproved. It is recommended that the charted dangerous submerged obstruction be deleted from the chart.

O. COMPARISON WITH CHARTS 11340 (56th Ed., July 17/93) 11357 (29th Ed., Oct. 2/93)

The charted hydrography originates with the previously discussed prior surveys and needs no further discussion. The following should be noted:

1. The hydrographer located twenty-eight platforms within the limits of the present survey. Twenty-six platforms fall in close proximity to charted platforms. Two of the platforms located by the hydrographer are uncharted. Seven additional charted platforms do not fall near any of the platforms located by the present survey and apparently no longer exist at the charted location. It is recommended that the platforms within the common area be charted as shown on the present survey unless other information indicates otherwise. It is also recommended that the company names of the platforms not be

charted to avoid chart clutter.

2. Uncharted platform (lighted) "MURPHY PL 19 073 21" was located by the hydrographer in Latitude 28°53'54.84"N, Longitude 90°41'42.55"W. This is in the same position as a presently charted dangerous submerged obstruction, PA. It should also be noted that the charted dangerous submerged obstruction replaced a previously charted platform in the same location that is shown on NOS chart 11357 (28th ED., Apr. 25/92). Side scan sonar coverage reveals no indication of a significant obstruction in the immediate area of the charted obstruction. It is recommended that the dangerous submerged obstruction be deleted from the chart. It is recommended that a platform (lighted) be charted as shown on the present survey unless other information indicates otherwise.

The present survey is adequate to supersede the chart in the common area.

P. ADEQUACY OF SURVEY

This is an adequate side scan sonar survey. No additional work is recommended.

S. MISCELLANEOUS

Chart compilation using the present survey was done by Atlantic Hydrographic Section personnel in Norfolk, Va. Compilation data will be forwarded to Mapping and Charting Division upon completion of survey.

MT MITCHELL Processing Team

Marilyn L. Schluter
Cartographic Technician
Verification of Field Data

Richard H. Whitfield
Cartographer
Evaluation and Analysis

APPROVAL SHEET
FE-398SS

Initial Approvals:

The completed survey has been inspected with regard to survey coverage, delineation of depth curves, development of critical depths, cartographic symbolization, and verification or disproval of charted data. The digital data have been completed and all revisions and additions made to the smooth sheet during survey processing have been entered in the magnetic tape record for this survey. A final sounding printout of the survey has been made. The survey records and digital data comply with NOS requirements except where noted in the Evaluation Report.

Robert R. Hill Date: July 5, 1995

Robert R. Hill
Cartographer
Atlantic Hydrographic Branch

I have reviewed the smooth sheet, accompanying data, and reports. This survey and accompanying digital data meet or exceed NOS requirements and standards for products in support of nautical charting except where noted in the Evaluation Report.

Nicholas E. Perugini Date: July 5, 1995

Nicholas E. Perugini, CDR, NOAA
Chief, Atlantic Hydrographic Branch

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Final Approval:

Approved: Andrew A. Armstrong III Date: July 19, 1995

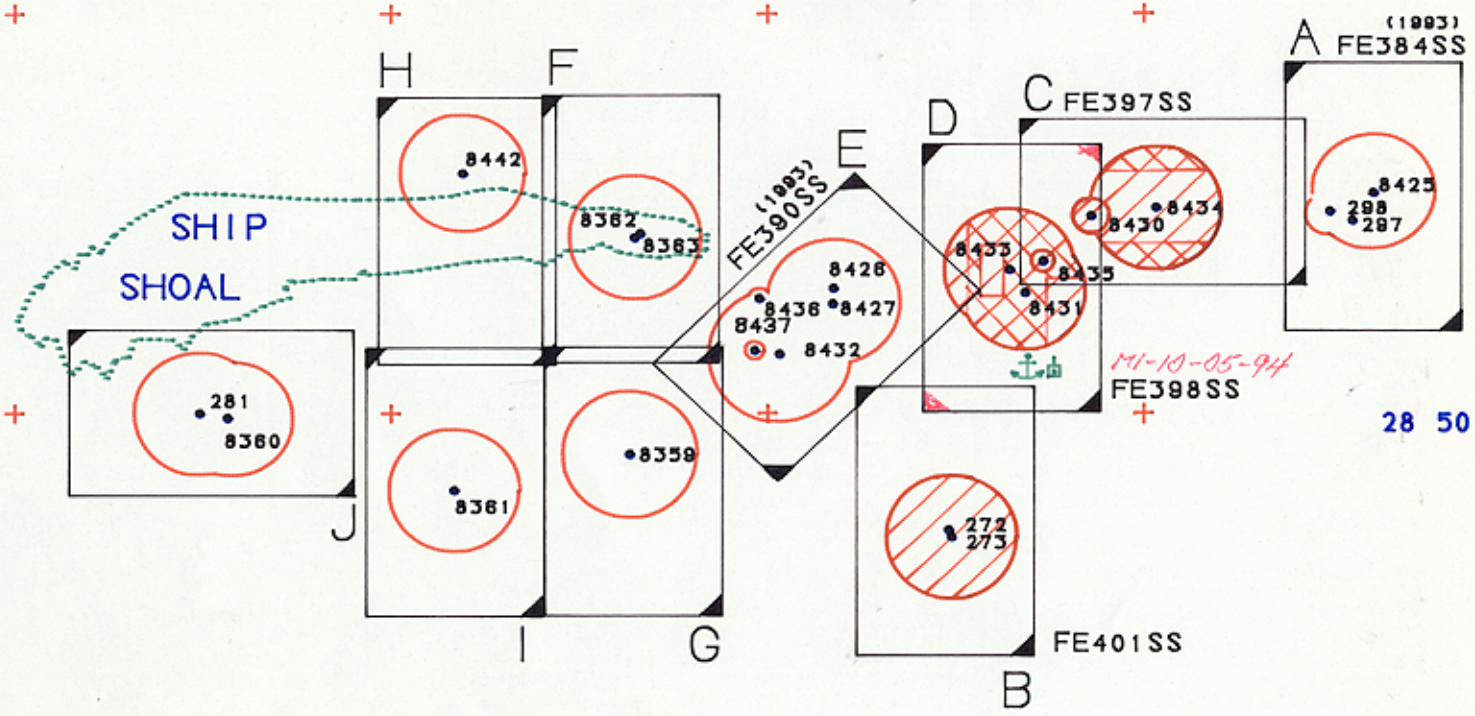
Andrew A. Armstrong III
Captain, NOAA
Chief, Hydrographic Surveys Division

PROJECT SKETCH
S-K904-MI-94
NOAA SHIP MT MITCHELL
CAPT. NICHOLAS A. PRAHL

TIDE GAUGE
876-2888

ISLES DERNIERES

LEGEND
AWOIS ITEM AND SEARCH RADIUS
100 % COVERAGE
200 % COVERAGE
CTD
ANCHORAGE



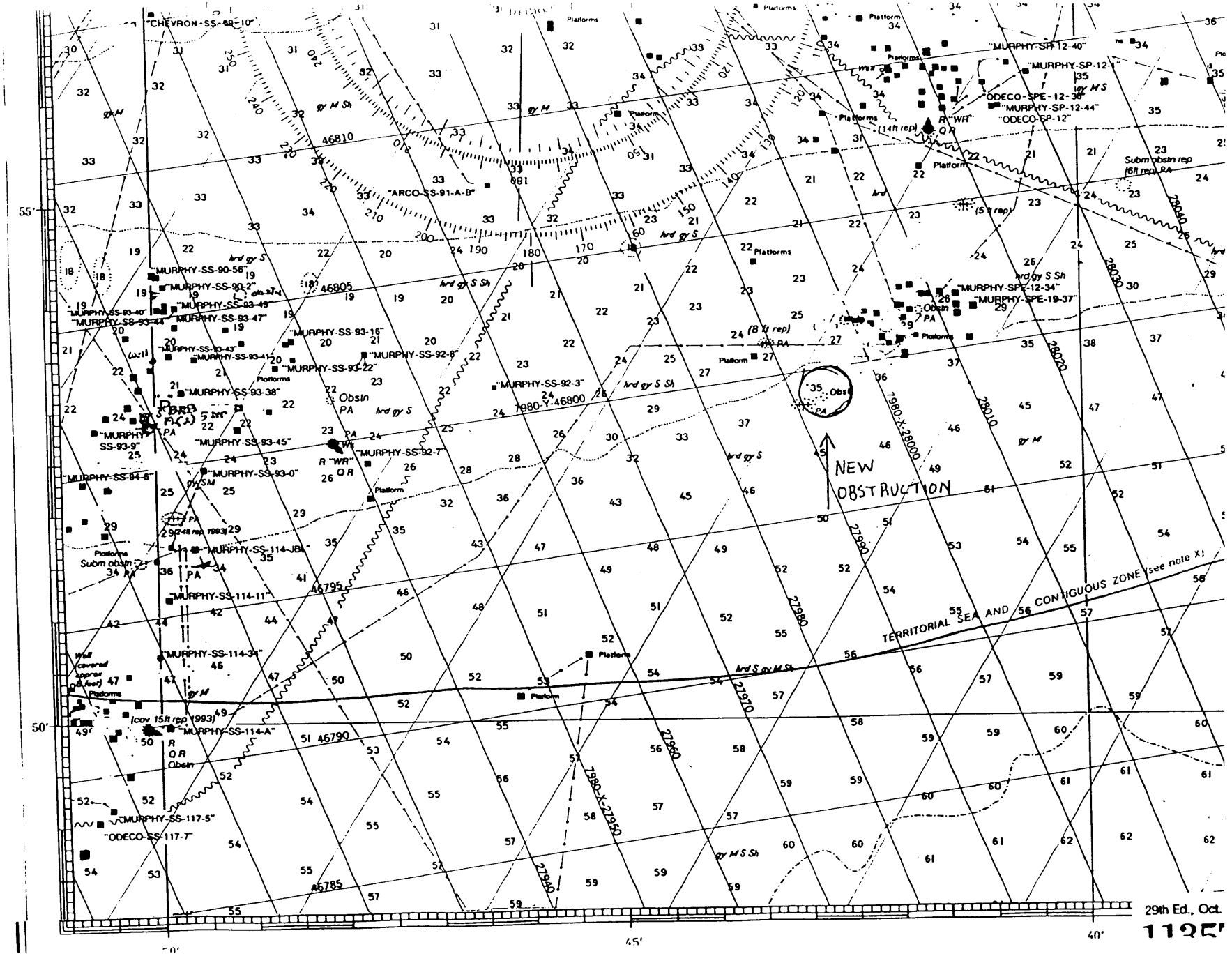
JUN	JUL	AUG		TOTALS
14.0	23.0		DAYS AT SEA	37.0
241.3	580.6		LNM	821.9
21.2	44.3		SQNM	65.5
1	2		CTD'S	3
0	8		DIVES	8
0	0		AWOIS RESOLVED	0
0	3		NEW ITEMS	3

65

91 10 | 91 00 | 90 50 | 90 40 | 90 30

28 50

28 40


NEW
OBSTRUCTION
TERRITORIAL SEA AND CONTIGUOUS ZONE (see note X)
"CHEVRON-SS-89-10"
"ARCO-SS-91-A-B"
"MURPHY-SS-90-56"
"MURPHY-SS-90-2"
"MURPHY-SS-93-49"
"MURPHY-SS-93-40"
"MURPHY-SS-93-44"
"MURPHY-SS-93-47"
"MURPHY-SS-93-43"
"MURPHY-SS-93-41"
"MURPHY-SS-93-38"
"MURPHY-SS-93-16"
"MURPHY-SS-92-8"
"MURPHY-SS-93-22"
"MURPHY-SS-92-3"
"MURPHY-SS-92-7"
"MURPHY-SS-93-45"
"MURPHY-SS-93-0"
"MURPHY-SS-94-6"
"MURPHY-SS-114-JBL"
"MURPHY-SS-114-11"
"MURPHY-SS-114-34"
"MURPHY-SS-114-A"
"MURPHY-SS-117-5"
"ODECO-SS-117-7"
"MURPHY-SP-12-40"
"MURPHY-SP-12-1"
"MURPHY-SP-12-44"
"ODECO-SP-12-36"
"ODECO-SP-12"
"MURPHY-SPE-12-34"
"MURPHY-SPE-19-37"
46810
46805
46800
46795
46790
46785
7980-Y-46800
7980-X-28000
28040
28030
28020
28010
27990
27980
27970
27960
7980-X-27950
27940
55'
50'
45'
40'

NOAA FORM 75-96
(10-83)

U.S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

MARINE CHART BRANCH

RECORD OF APPLICATION TO CHARTS

FILE WITH DESCRIPTIVE REPORT OF SURVEY NO. FE-398SS

INSTRUCTIONS

A basic hydrographic or topographic survey supersedes all information of like nature on the uncorrected chart.

1. Letter all information.
2. In "Remarks" column cross out words that do not apply.
3. Give reasons for deviations, if any, from recommendations made under "Comparison with Charts" in the Review.

CHART	DATE	CARTOGRAPHER	REMARKS
11357	6/7/95	R.H. Whitfield	Full ~~Part~~ Before ~~After~~ Marine Center Approval Signed Via
			Drawing No. 45
11340	8-10-95	R.K.Ross	Full ~~Part~~ Before After Marine Center Approval Signed Via
			Drawing No. 76 thru 11357
			Full Part Before After Marine Center Approval Signed Via
			Drawing No.
			Full Part Before After Marine Center Approval Signed Via
			Drawing No.
			Full Part Before After Marine Center Approval Signed Via
			Drawing No.
			Full Part Before After Marine Center Approval Signed Via
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			Full Part Before After Marine Center Approval Signed Via
			Drawing No.
			Full Part Before After Marine Center Approval Signed Via
			Drawing No.

SUPERSEDES C&GS FORM 8352 WHICH MAY BE USED.